FIG. 1

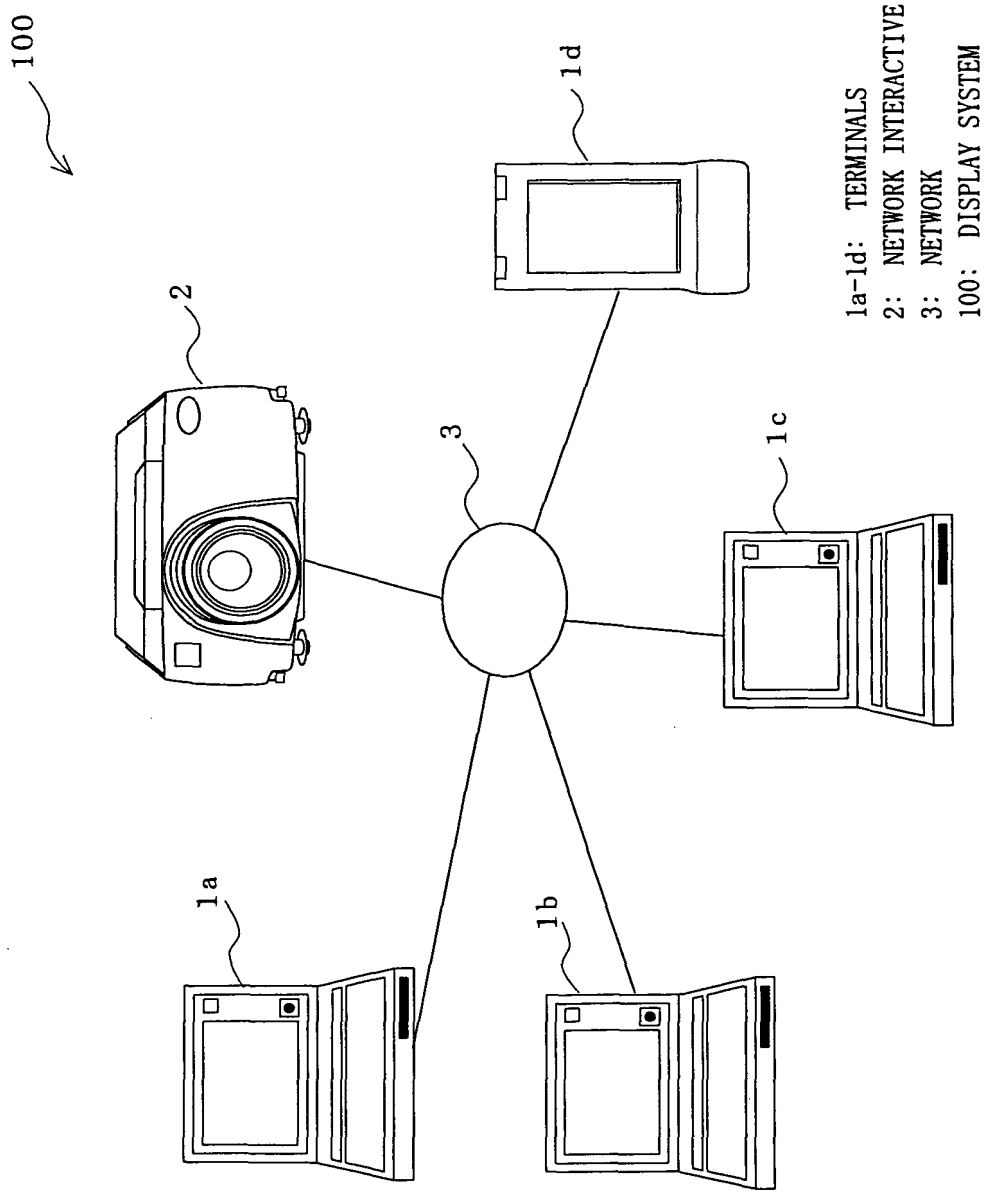

100
1d
2
3
1c
1a
1b
1a-1d: TERMINALS
2: NETWORK INTERACTIVE DISPLAY DEVICE
3: NETWORK
100: DISPLAY SYSTEM

FIG. 2

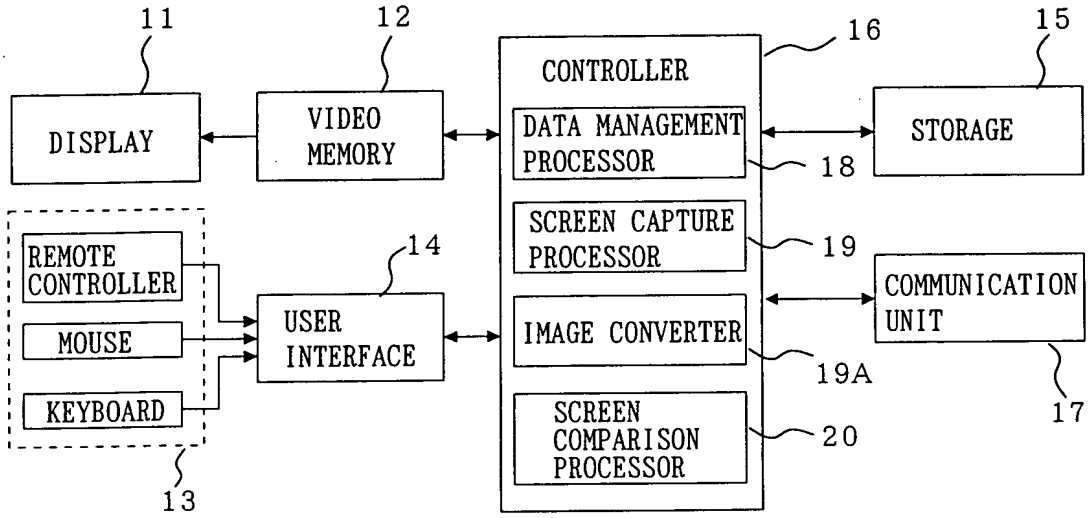

11
12
16
15
DISPLAY
VIDEO MEMORY
CONTROLLER
DATA MANAGEMENT PROCESSOR
STORAGE
18
SCREEN CAPTURE PROCESSOR
19
REMOTE CONTROLLER
14
COMMUNICATION UNIT
MOUSE
USER INTERFACE
IMAGE CONVERTER
19A
KEYBOARD
SCREEN COMPARISON PROCESSOR
20
17
13

FIG. 3

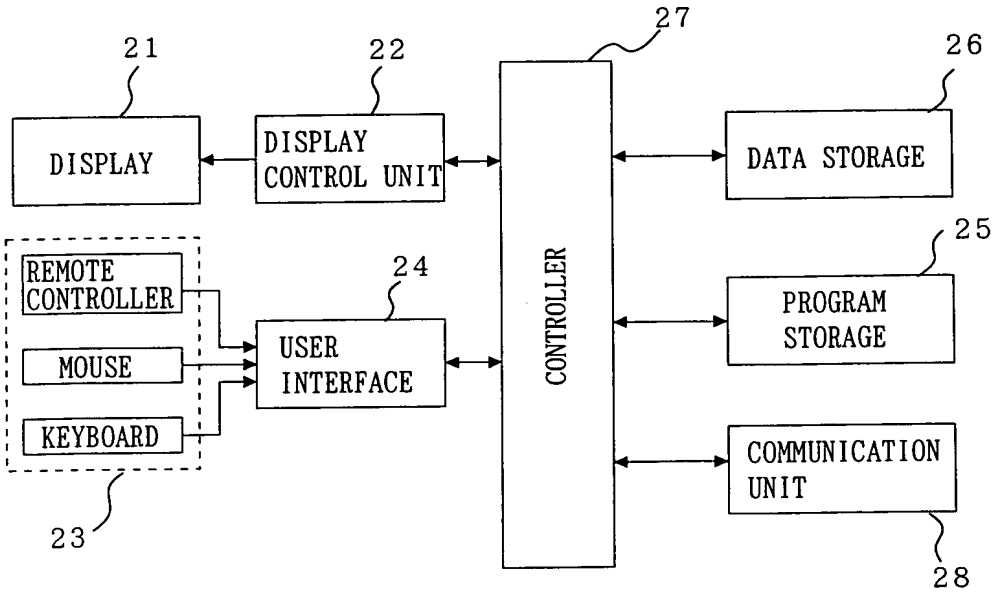

27
21
22
26
DISPLAY
DISPLAY CONTROL UNIT
DATA STORAGE
25
REMOTE CONTROLLER
24
PROGRAM STORAGE
MOUSE
USER INTERFACE
CONTROLLER
KEYBOARD
COMMUNICATION UNIT
23
28

FIG. 4

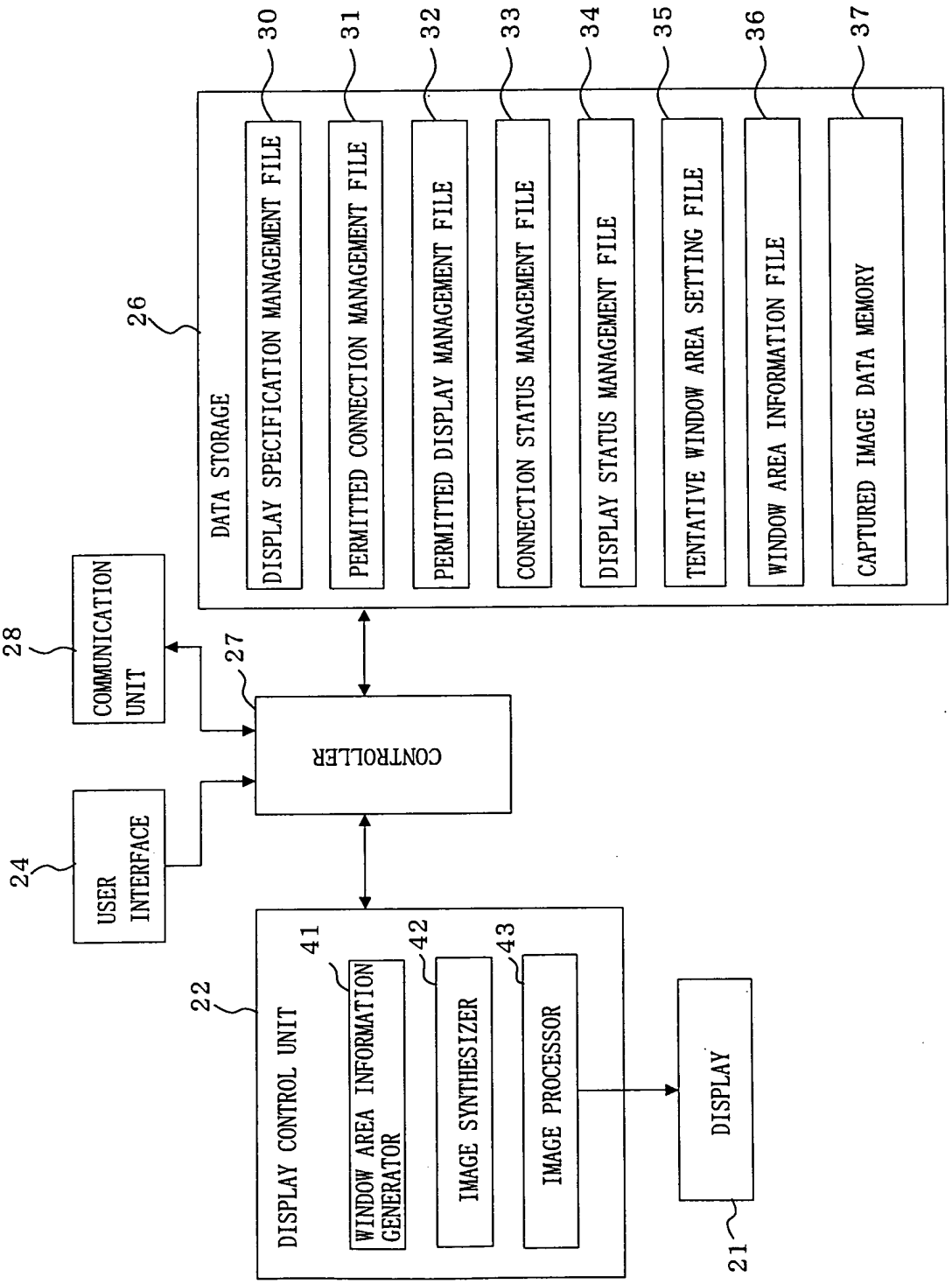

DISPLAY CONTROL UNIT
22
WINDOW AREA INFORMATION GENERATOR
41
IMAGE SYNTHESIZER
42
IMAGE PROCESSOR
43
DISPLAY
21
USER INTERFACE
24
COMMUNICATION UNIT
28
CONTROLLER
27
DATA STORAGE
26
DISPLAY SPECIFICATION MANAGEMENT FILE
30
PERMITTED CONNECTION MANAGEMENT FILE
31
PERMITTED DISPLAY MANAGEMENT FILE
32
CONNECTION STATUS MANAGEMENT FILE
33
DISPLAY STATUS MANAGEMENT FILE
34
TENTATIVE WINDOW AREA SETTING FILE
35
WINDOW AREA INFORMATION FILE
36
CAPTURED IMAGE DATA MEMORY
37

FIG. 5

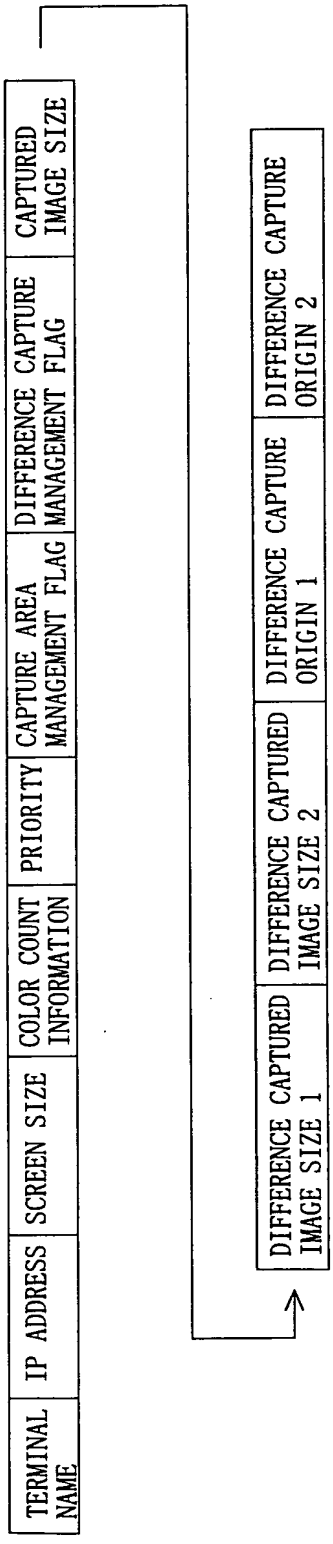

TERMINAL NAME
IP ADDRESS
SCREEN SIZE
COLOR COUNT INFORMATION
PRIORITY
CAPTURE AREA MANAGEMENT FLAG
DIFFERENCE CAPTURE MANAGEMENT FLAG
CAPTURED IMAGE SIZE
DIFFERENCE CAPTURED IMAGE SIZE 1
DIFFERENCE CAPTURED IMAGE SIZE 2
DIFFERENCE CAPTURE ORIGIN 1
DIFFERENCE CAPTURE ORIGIN 2

FIG. 6

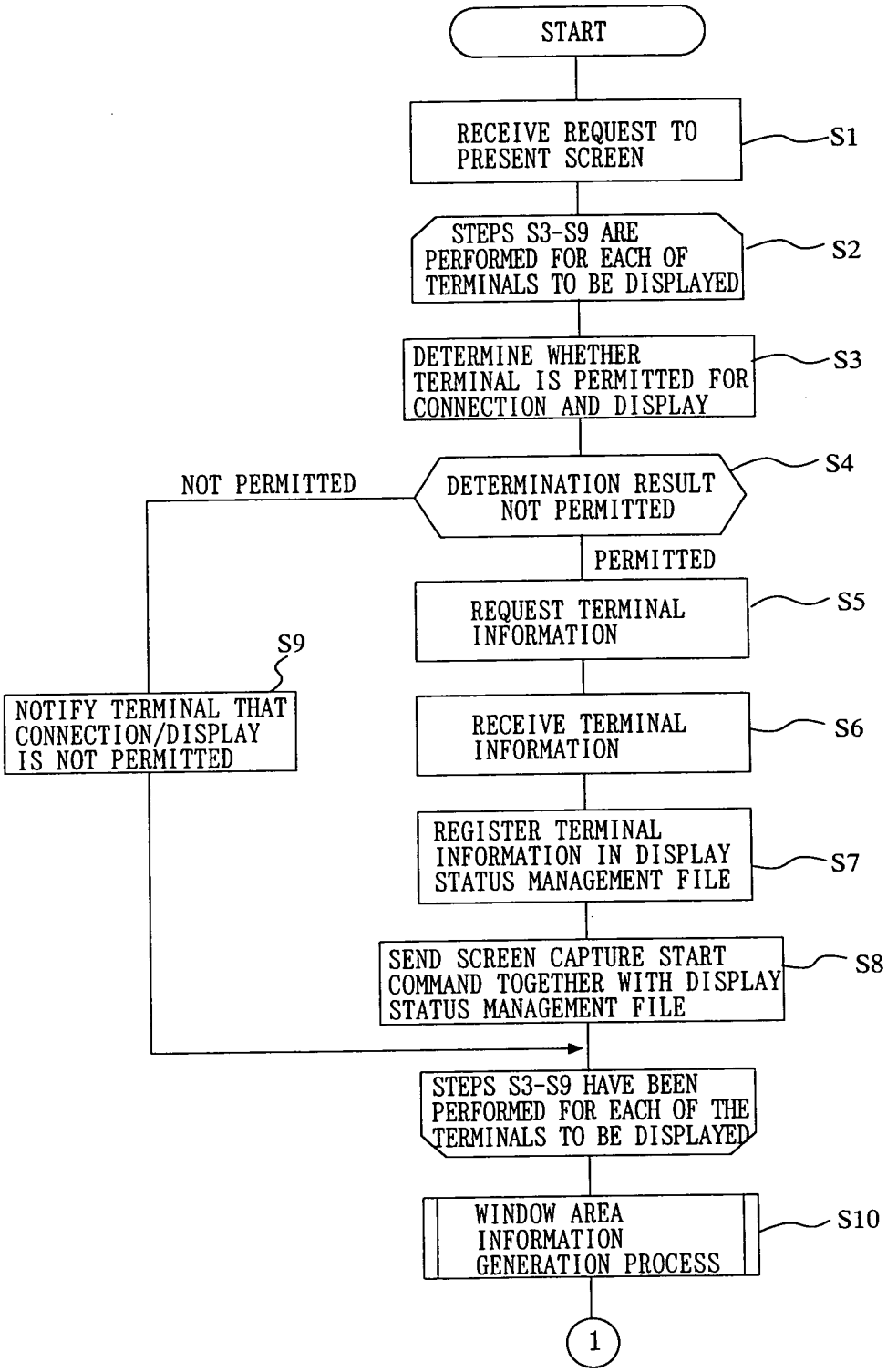

START
RECEIVE REQUEST TO PRESENT SCREEN
S1
STEPS S3-S9 ARE PERFORMED FOR EACH OF TERMINALS TO BE DISPLAYED
S2
DETERMINE WHETHER TERMINAL IS PERMITTED FOR CONNECTION AND DISPLAY
S3
DETERMINATION RESULT NOT PERMITTED
S4
NOT PERMITTED
PERMITTED
REQUEST TERMINAL INFORMATION
S5
S9
NOTIFY TERMINAL THAT CONNECTION/DISPLAY IS NOT PERMITTED
RECEIVE TERMINAL INFORMATION
S6
REGISTER TERMINAL INFORMATION IN DISPLAY STATUS MANAGEMENT FILE
S7
SEND SCREEN CAPTURE START COMMAND TOGETHER WITH DISPLAY STATUS MANAGEMENT FILE
S8
STEPS S3-S9 HAVE BEEN PERFORMED FOR EACH OF THE TERMINALS TO BE DISPLAYED
WINDOW AREA INFORMATION GENERATION PROCESS
S10
1

FIG. 7

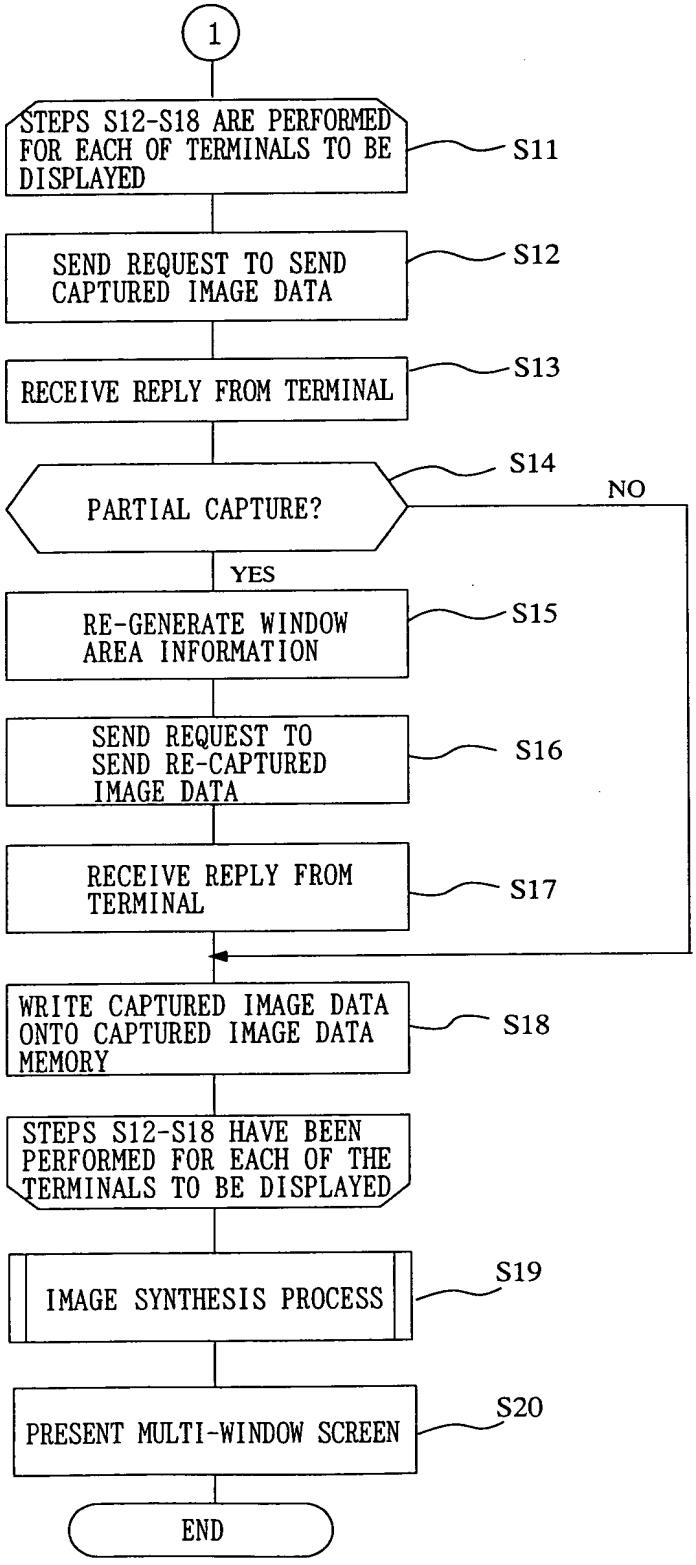

1
STEPS S12-S18 ARE PERFORMED FOR EACH OF TERMINALS TO BE DISPLAYED
S11
SEND REQUEST TO SEND CAPTURED IMAGE DATA
S12
RECEIVE REPLY FROM TERMINAL
S13
PARTIAL CAPTURE?
S14
NO
YES
RE-GENERATE WINDOW AREA INFORMATION
S15
SEND REQUEST TO SEND RE-CAPTURED IMAGE DATA
S16
RECEIVE REPLY FROM TERMINAL
S17
WRITE CAPTURED IMAGE DATA ONTO CAPTURED IMAGE DATA MEMORY
S18
STEPS S12-S18 HAVE BEEN PERFORMED FOR EACH OF THE TERMINALS TO BE DISPLAYED
IMAGE SYNTHESIS PROCESS
S19
PRESENT MULTI-WINDOW SCREEN
S20
END

FIG. 8

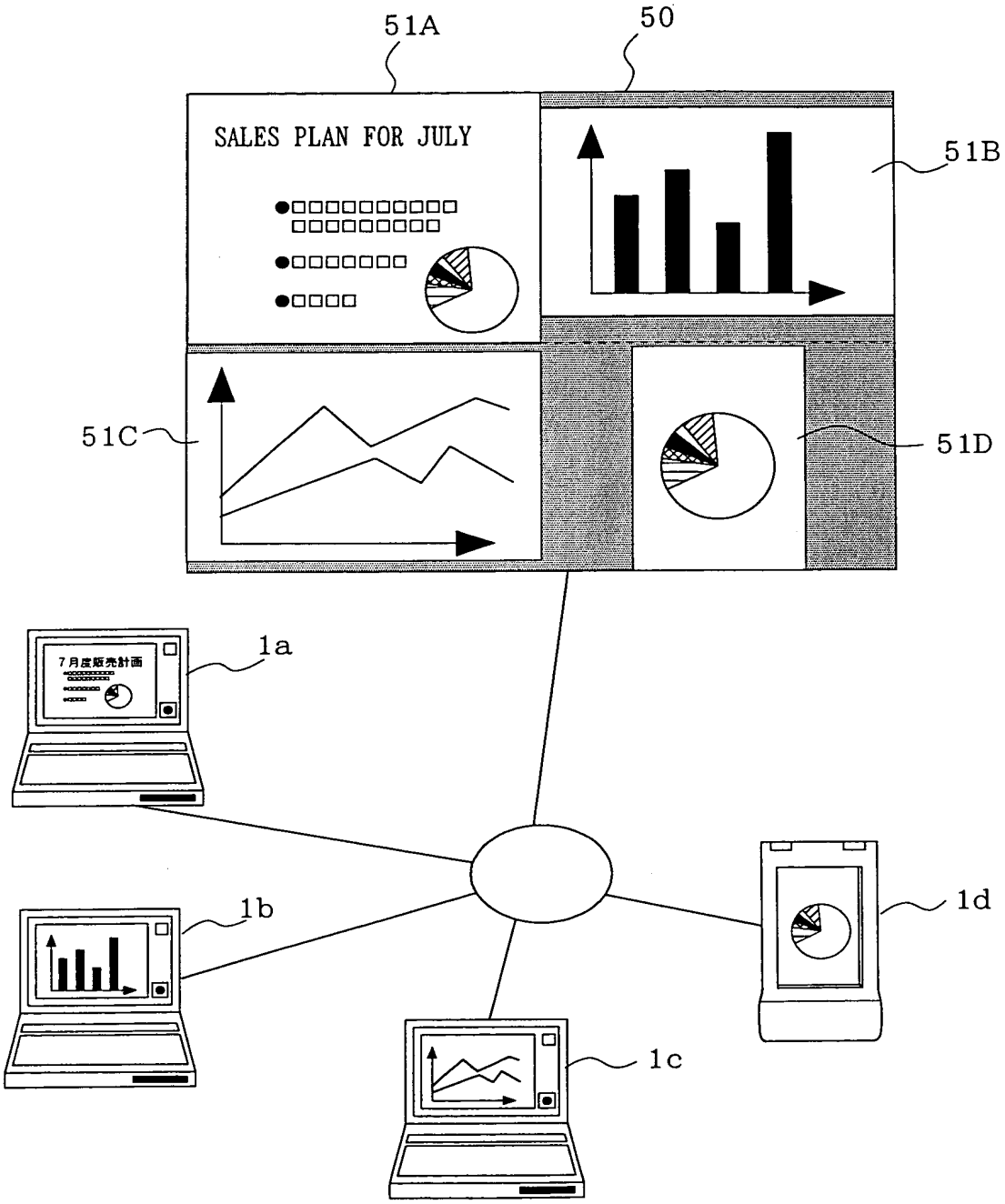


FIG. 9

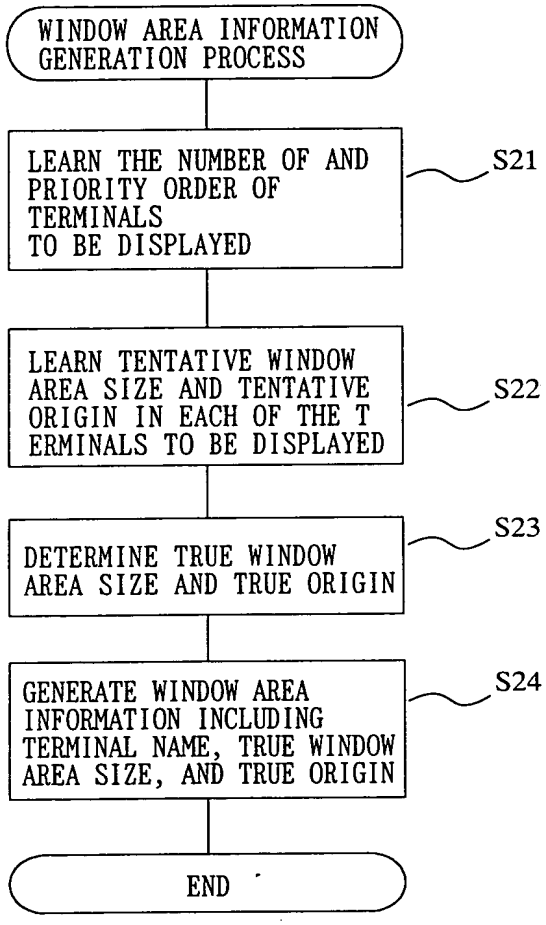

WINDOW AREA INFORMATION GENERATION PROCESS
LEARN THE NUMBER OF AND PRIORITY ORDER OF TERMINALS TO BE DISPLAYED
S21
LEARN TENTATIVE WINDOW AREA SIZE AND TENTATIVE ORIGIN IN EACH OF THE T ERMINALS TO BE DISPLAYED
S22
DETERMINE TRUE WINDOW AREA SIZE AND TRUE ORIGIN
S23
GENERATE WINDOW AREA INFORMATION INCLUDING TERMINAL NAME, TRUE WINDOW AREA SIZE, AND TRUE ORIGIN
S24
END

FIG. 10

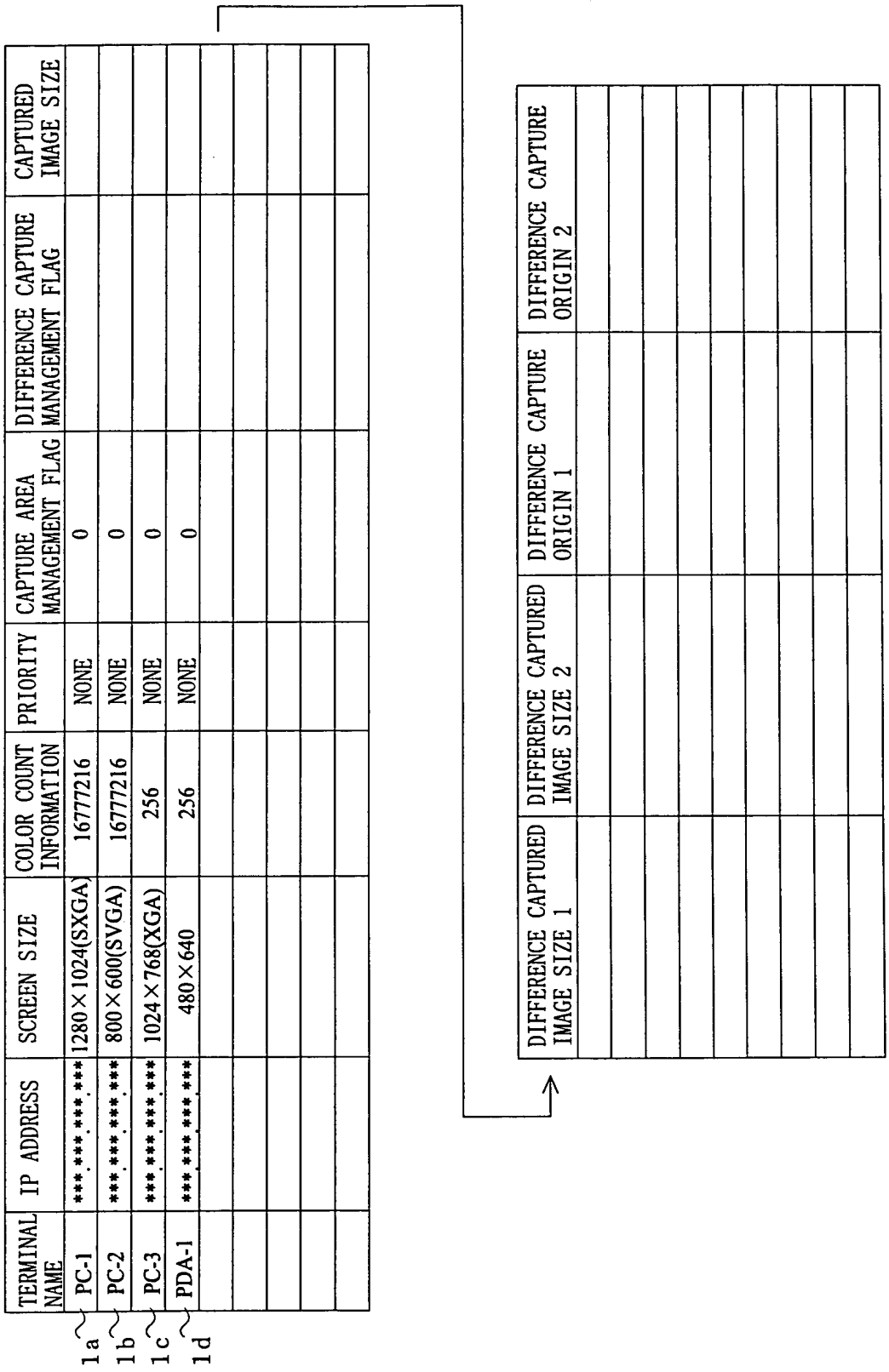

TERMINAL NAME
IP ADDRESS
SCREEN SIZE
COLOR COUNT INFORMATION
PRIORITY
CAPTURE AREA MANAGEMENT FLAG
DIFFERENCE CAPTURE MANAGEMENT FLAG
CAPTURED IMAGE SIZE
PC-1
PC-2
PC-3
PDA-1
1a
1b
1c
1d
..***.***
1280×1024(SXGA)
16777216
NONE
0
800×600(SVGA)
16777216
NONE
0
1024×768(XGA)
256
NONE
0
480×640
256
NONE
0
DIFFERENCE CAPTURED IMAGE SIZE 1
DIFFERENCE CAPTURED IMAGE SIZE 2
DIFFERENCE CAPTURE ORIGIN 1
DIFFERENCE CAPTURE ORIGIN 2

FIG. 11A

NUMBER OF TERMINALS		FIRST	SECOND	THIRD	FOURTH
4	PRIORITY	NONE	NONE	NONE	NONE
		↓	↓	↓	↓
	TENTATIVE SIZE	640×512	640×512	640×512	640×512
	TENTATIVE ORIGIN	0, 0	640, 0	0, 512	640, 512

FIG. 11B

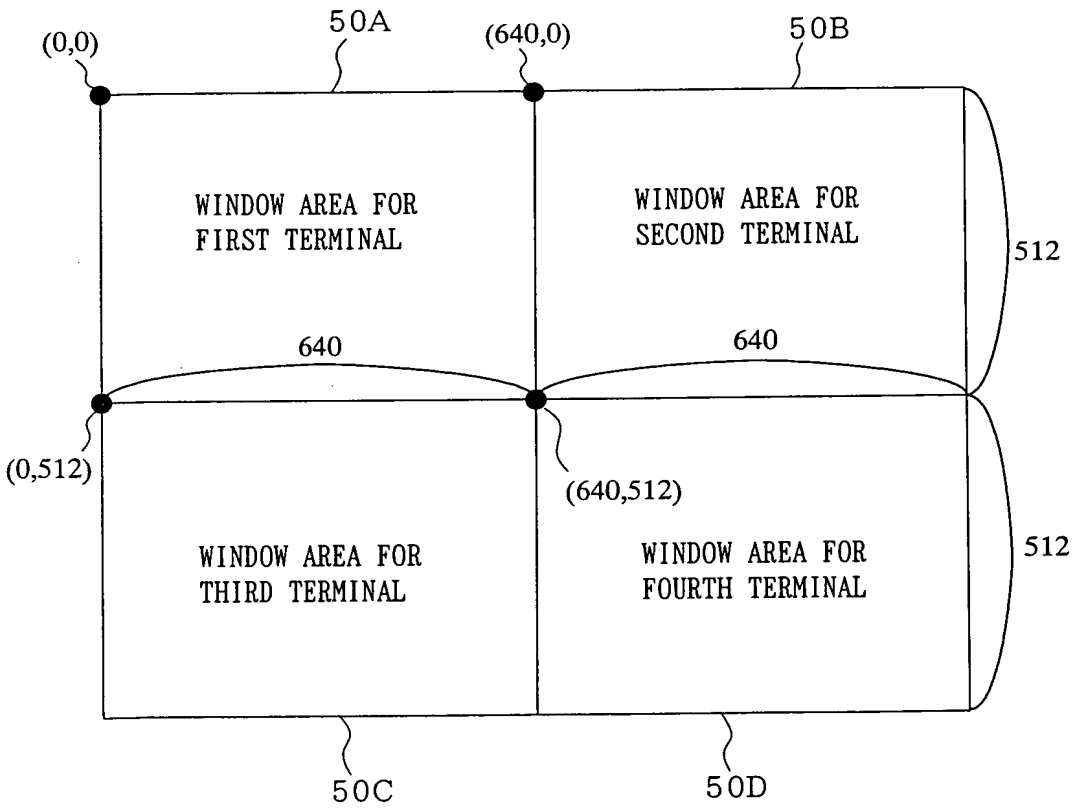


FIG. 12

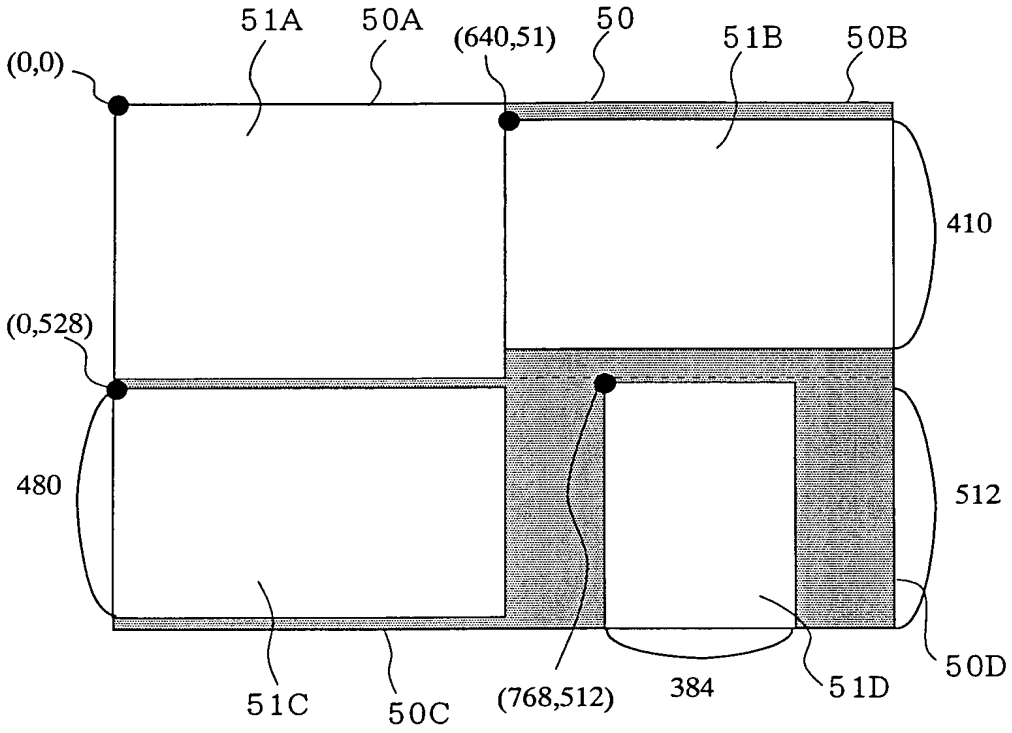


FIG. 13

TERMINAL NAME	PC-1	PC-2	PC-3	PDA-1
TRUE SIZE	640×512	640×410	640×480	384×512
TRUE ORIGIN	0,0	640,51	0,528	768,512

DATE AND TIME: MAY 21, 2002, 17:00:32

FIG. 14

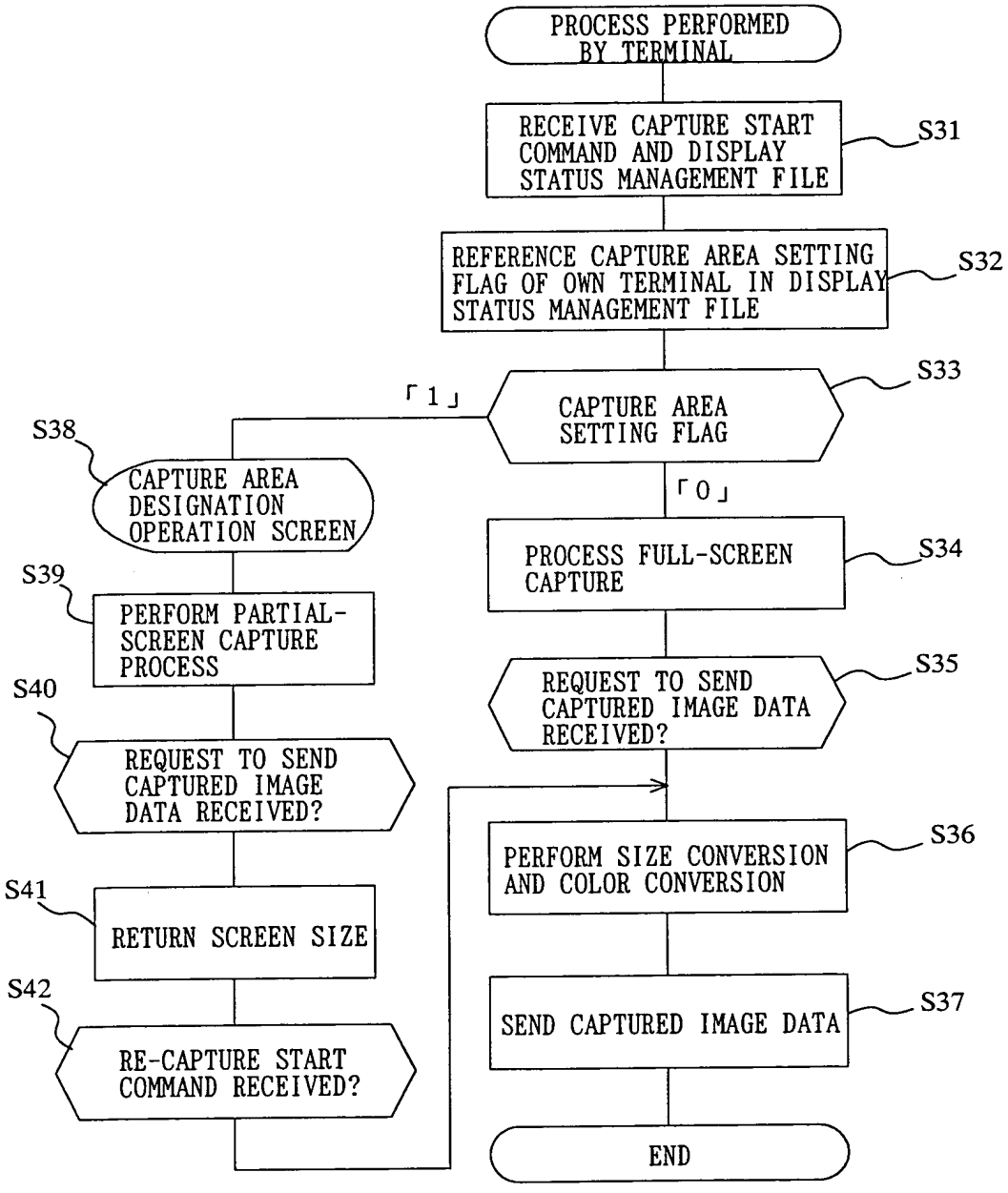

PROCESS PERFORMED BY TERMINAL
RECEIVE CAPTURE START COMMAND AND DISPLAY STATUS MANAGEMENT FILE
S31
REFERENCE CAPTURE AREA SETTING FLAG OF OWN TERMINAL IN DISPLAY STATUS MANAGEMENT FILE
S32
CAPTURE AREA SETTING FLAG
S33
「1」
「0」
S38
CAPTURE AREA DESIGNATION OPERATION SCREEN
S39
PERFORM PARTIAL-SCREEN CAPTURE PROCESS
S40
REQUEST TO SEND CAPTURED IMAGE DATA RECEIVED?
S41
RETURN SCREEN SIZE
S42
RE-CAPTURE START COMMAND RECEIVED?
PROCESS FULL-SCREEN CAPTURE
S34
REQUEST TO SEND CAPTURED IMAGE DATA RECEIVED?
S35
PERFORM SIZE CONVERSION AND COLOR CONVERSION
S36
SEND CAPTURED IMAGE DATA
S37
END

FIG. 15

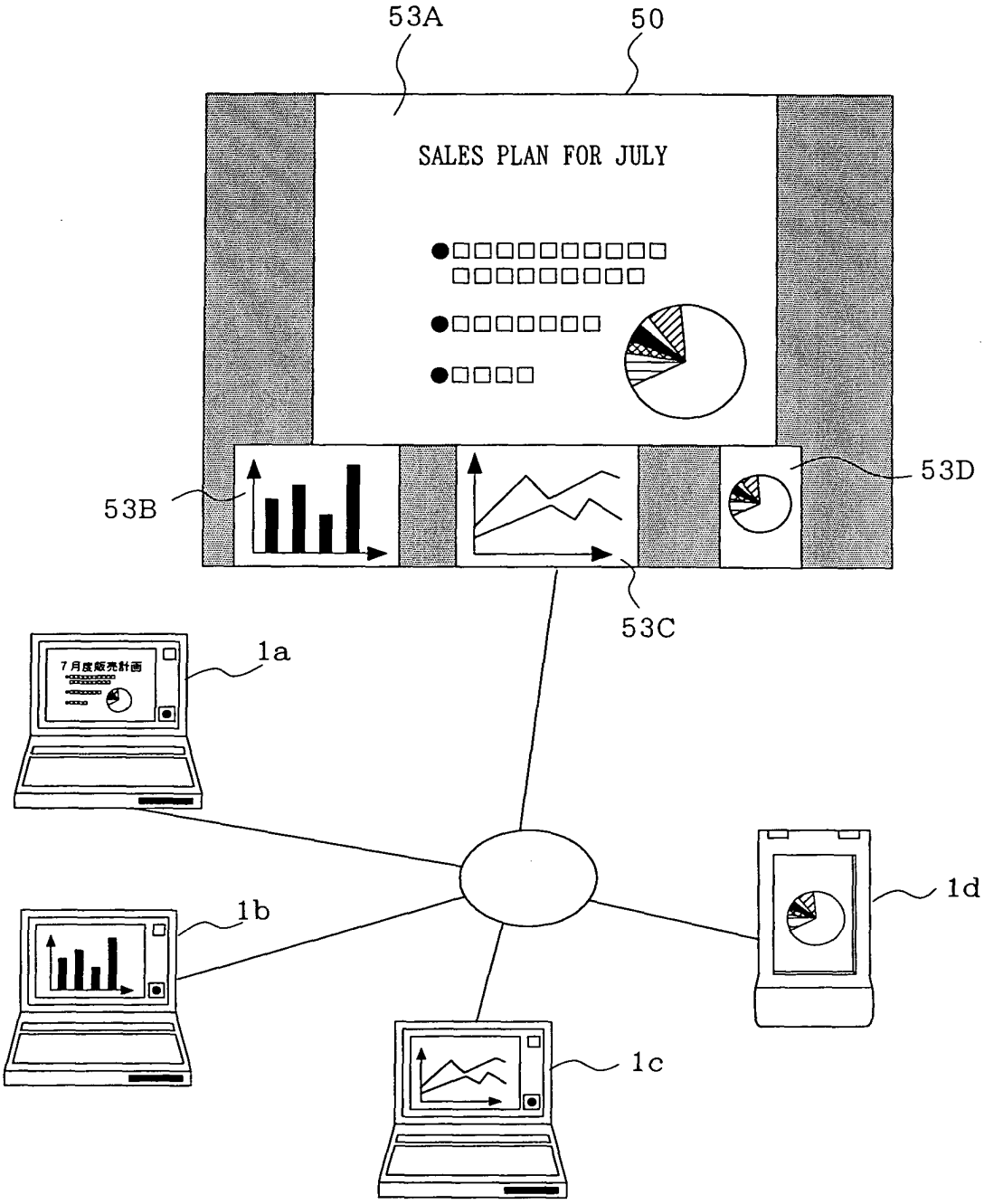


FIG. 16A

NUMBER OF TERMINALS		FIRST	SECOND	THIRD	FOURTH
4	PRIORITY	HIGH	NONE	NONE	NONE
		↓	↓	↓	↓
	TENTATIVE SIZE	1280×768	427×256	427×256	426×256
	TENTATIVE ORIGIN	0, 0	0,768	427,768	854,768

FIG. 16B

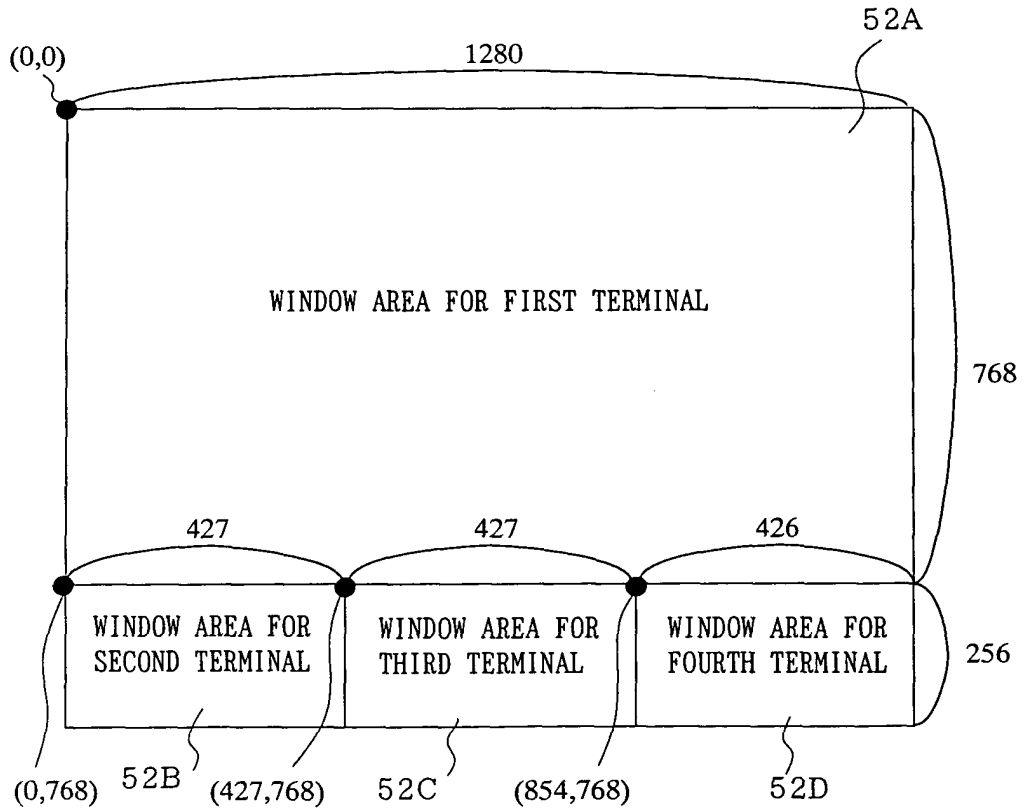


FIG. 17

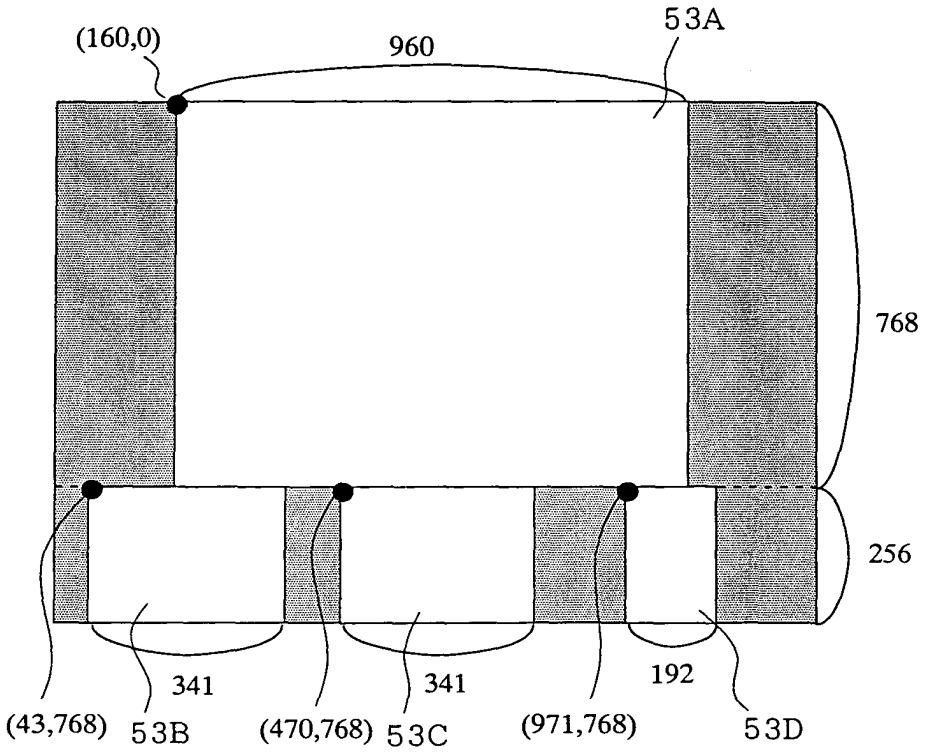


FIG. 18

TERMINAL NAME	PC-1	PC-2	PC-3	PDA-1
TRUE SIZE	960×768	341×256	341×256	192×256
TRUE ORIGIN	160,0	43,768	470,768	971,768

DATE AND TIME: MAY 21, 2002, 17:00:32

FIG. 19

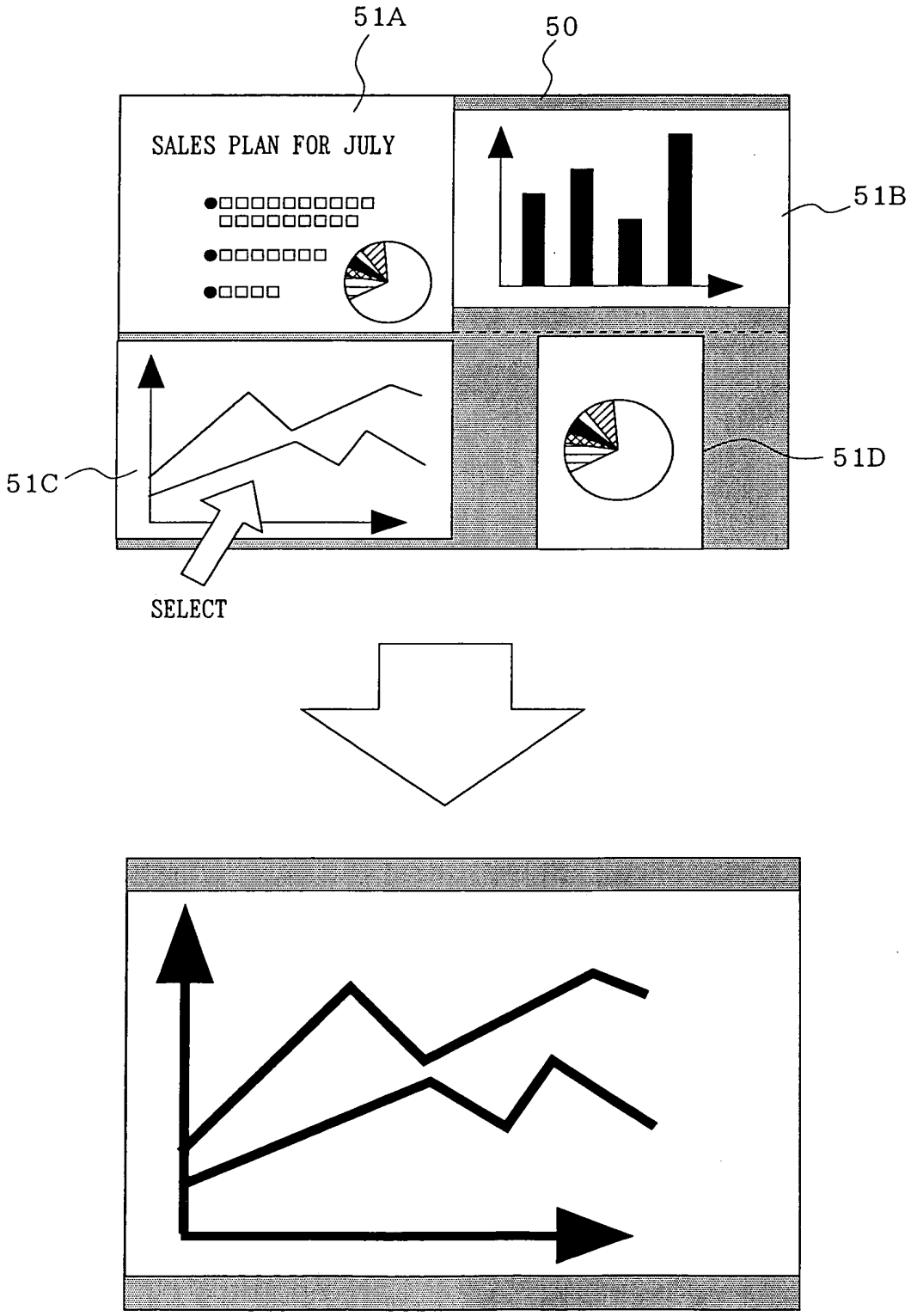


FIG. 20

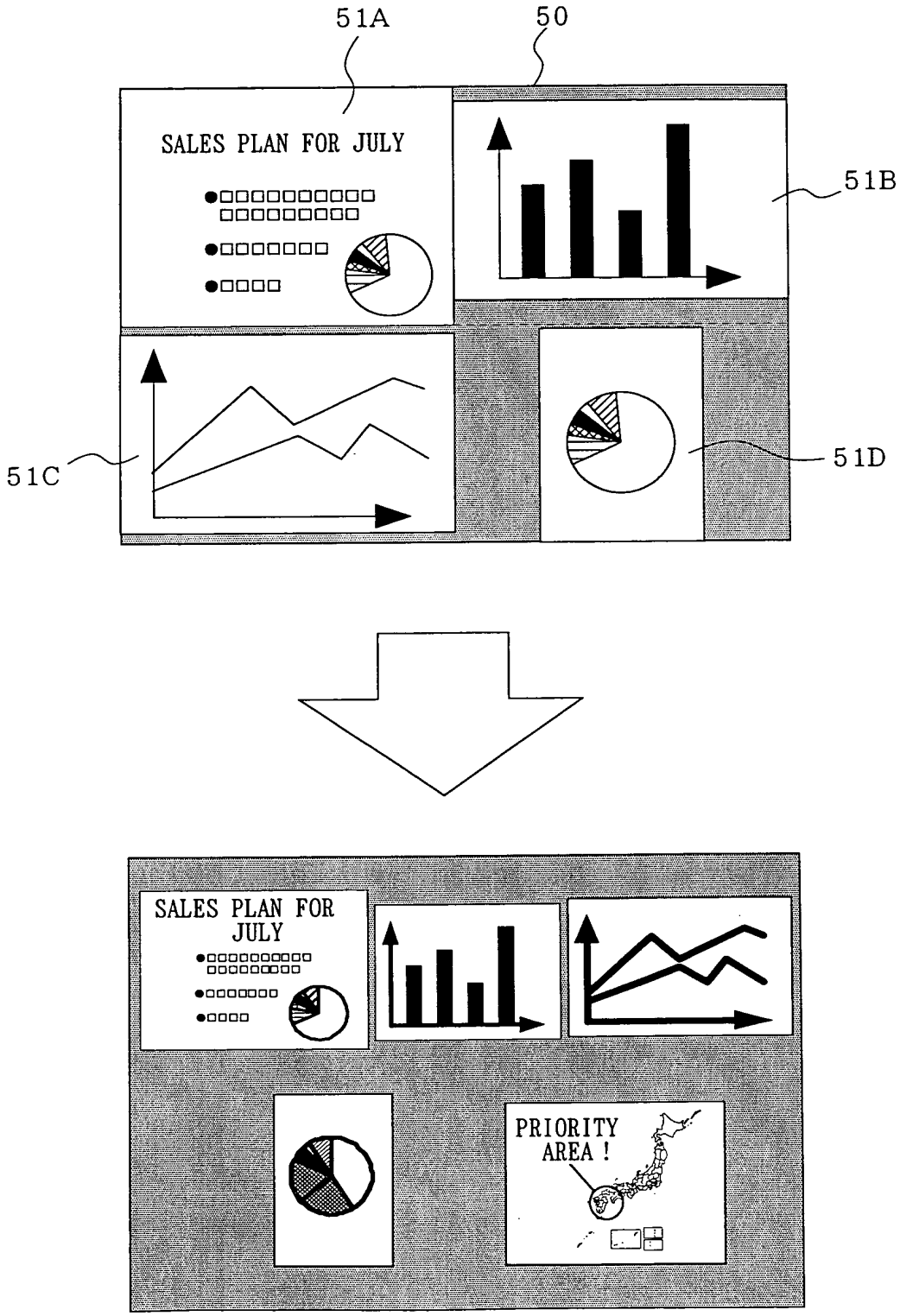

51A
50
SALES PLAN FOR JULY
51B
51C
51D
SALES PLAN FOR JULY
PRIORITY AREA !

FIG. 21

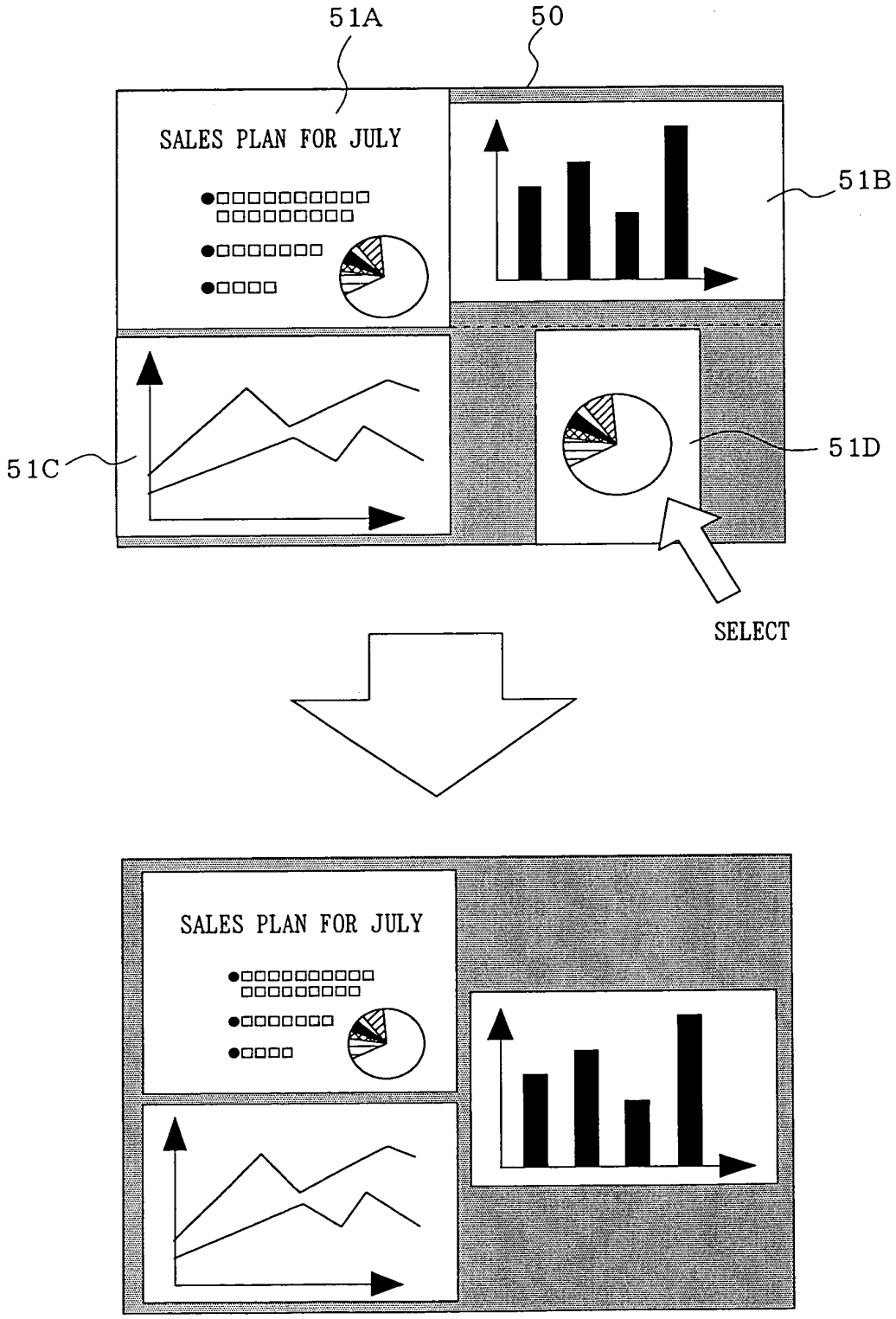

51A
50
SALES PLAN FOR JULY
51B
51C
51D
SELECT
SALES PLAN FOR JULY

FIG. 22

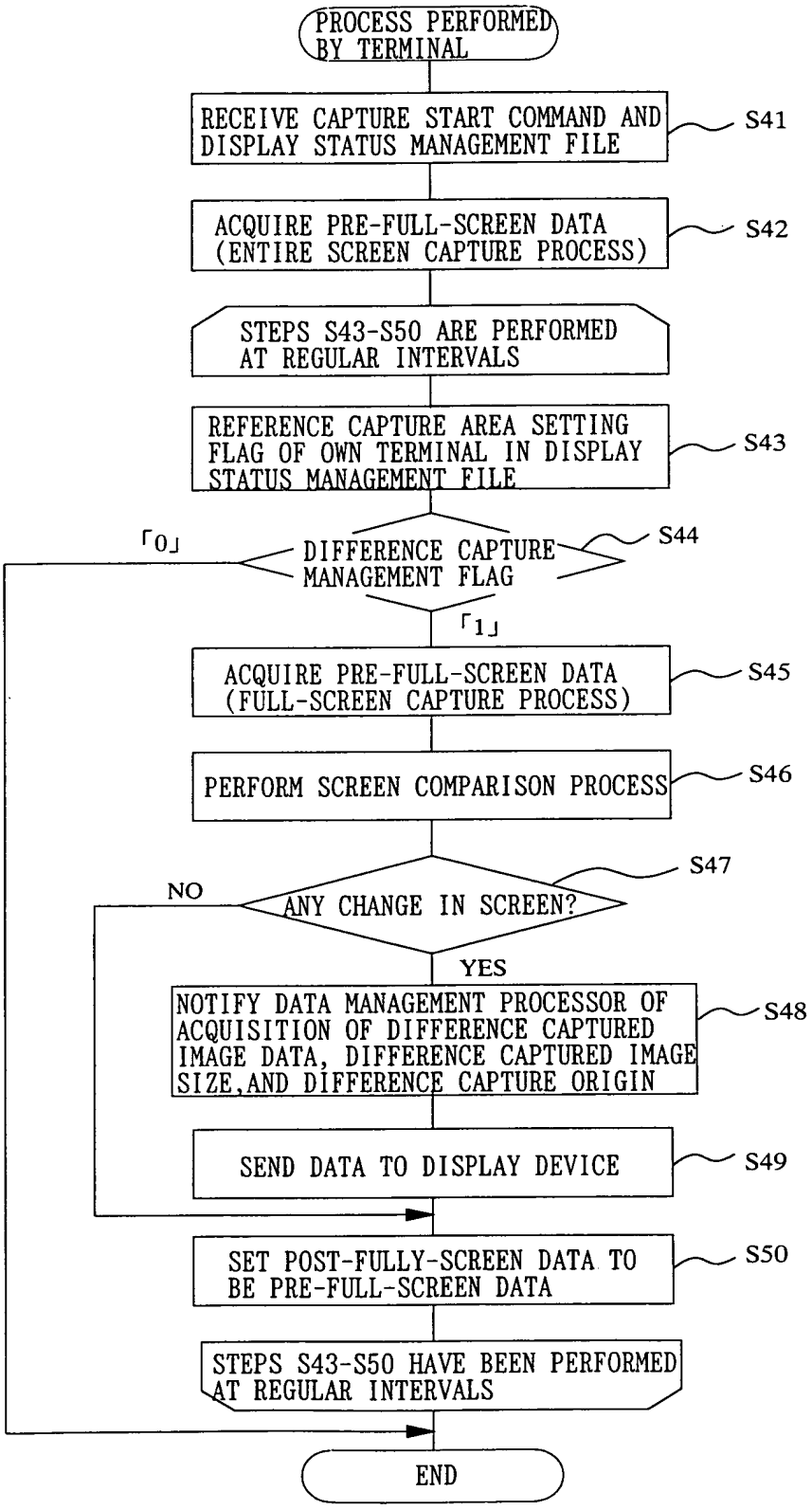

PROCESS PERFORMED BY TERMINAL
RECEIVE CAPTURE START COMMAND AND DISPLAY STATUS MANAGEMENT FILE
S41
ACQUIRE PRE-FULL-SCREEN DATA (ENTIRE SCREEN CAPTURE PROCESS)
S42
STEPS S43-S50 ARE PERFORMED AT REGULAR INTERVALS
REFERENCE CAPTURE AREA SETTING FLAG OF OWN TERMINAL IN DISPLAY STATUS MANAGEMENT FILE
S43
DIFFERENCE CAPTURE MANAGEMENT FLAG
S44
「0」
「1」
ACQUIRE PRE-FULL-SCREEN DATA (FULL-SCREEN CAPTURE PROCESS)
S45
PERFORM SCREEN COMPARISON PROCESS
S46
ANY CHANGE IN SCREEN?
S47
NO
YES
NOTIFY DATA MANAGEMENT PROCESSOR OF ACQUISITION OF DIFFERENCE CAPTURED IMAGE DATA, DIFFERENCE CAPTURED IMAGE SIZE,AND DIFFERENCE CAPTURE ORIGIN
S48
SEND DATA TO DISPLAY DEVICE
S49
SET POST-FULLY-SCREEN DATA TO BE PRE-FULL-SCREEN DATA
S50
STEPS S43-S50 HAVE BEEN PERFORMED AT REGULAR INTERVALS
END

FIG. 23

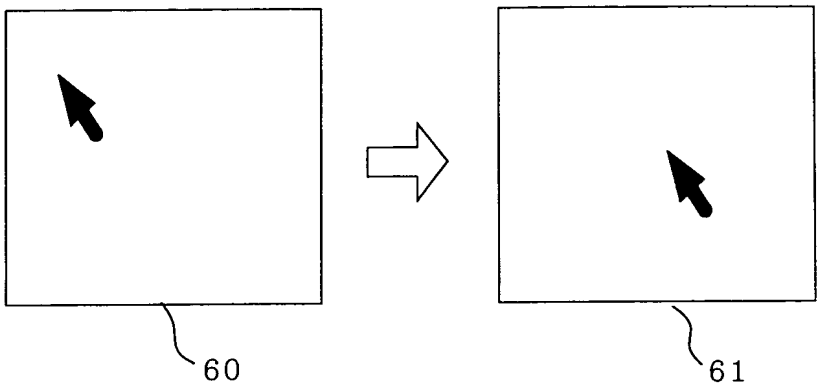


FIG. 24

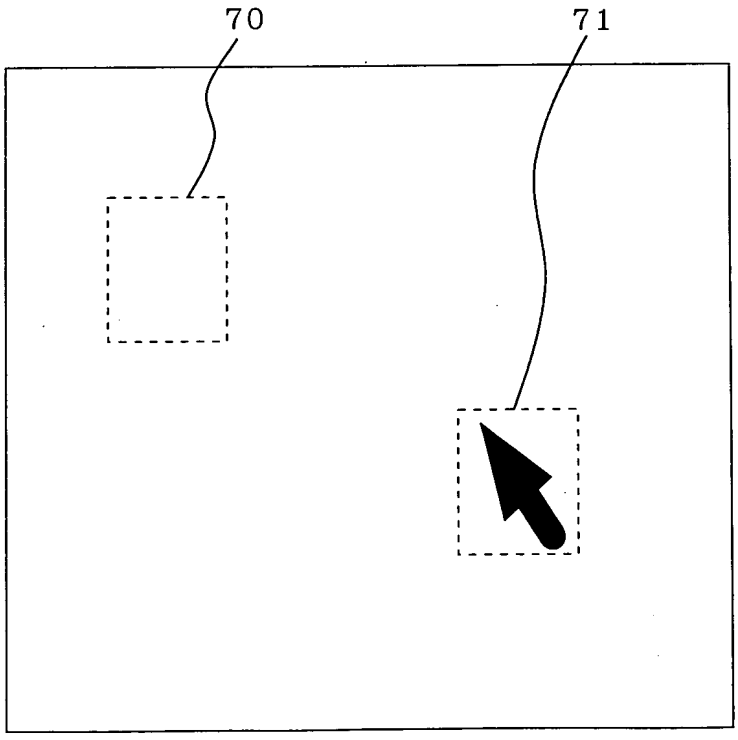


FIG. 25

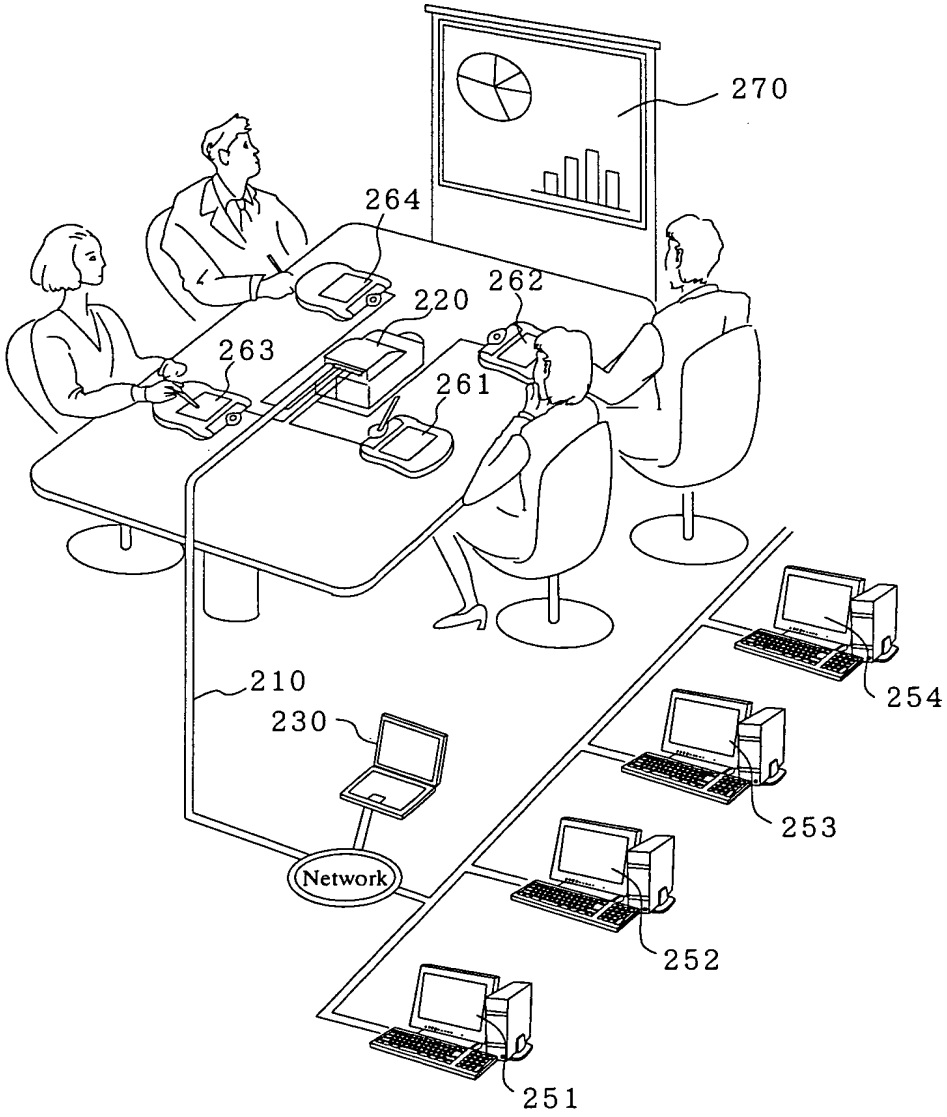


FIG. 26

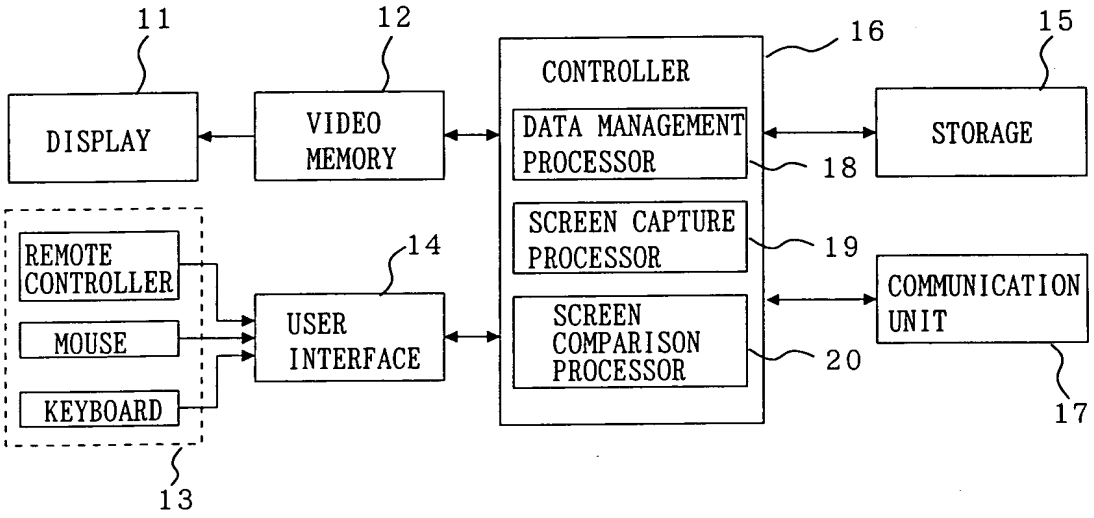

11
12
16
15
DISPLAY
VIDEO MEMORY
CONTROLLER
DATA MANAGEMENT PROCESSOR
STORAGE
18
SCREEN CAPTURE PROCESSOR
19
REMOTE CONTROLLER
14
COMMUNICATION UNIT
MOUSE
USER INTERFACE
SCREEN COMPARISON PROCESSOR
20
KEYBOARD
17
13

FIG. 27

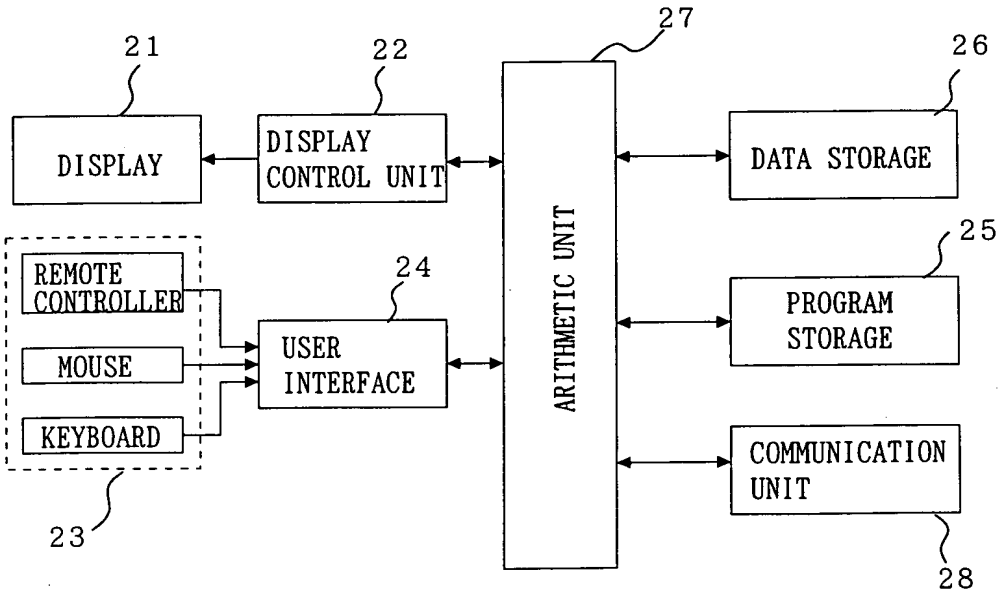

27
21
22
26
DISPLAY
DISPLAY CONTROL UNIT
DATA STORAGE
25
REMOTE CONTROLLER
24
PROGRAM STORAGE
MOUSE
USER INTERFACE
ARITHMETIC UNIT
KEYBOARD
COMMUNICATION UNIT
23
28

FIG. 28

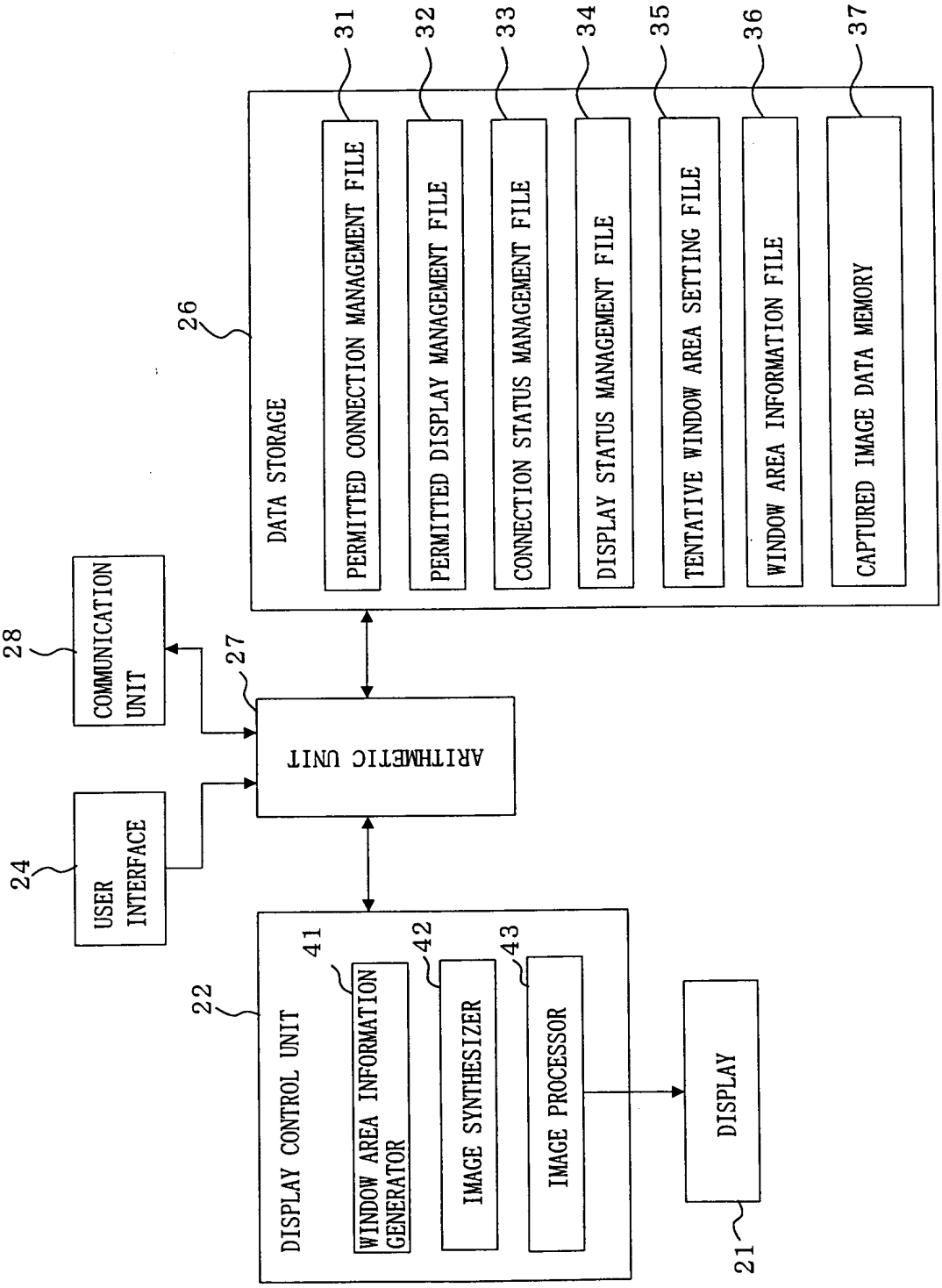

DISPLAY CONTROL UNIT
22
WINDOW AREA INFORMATION GENERATOR
41
IMAGE SYNTHESIZER
42
IMAGE PROCESSOR
43
DISPLAY
21
USER INTERFACE
24
COMMUNICATION UNIT
28
ARITHMETIC UNIT
27
DATA STORAGE
26
PERMITTED CONNECTION MANAGEMENT FILE
31
PERMITTED DISPLAY MANAGEMENT FILE
32
CONNECTION STATUS MANAGEMENT FILE
33
DISPLAY STATUS MANAGEMENT FILE
34
TENTATIVE WINDOW AREA SETTING FILE
35
WINDOW AREA INFORMATION FILE
36
CAPTURED IMAGE DATA MEMORY
37

FIG. 29

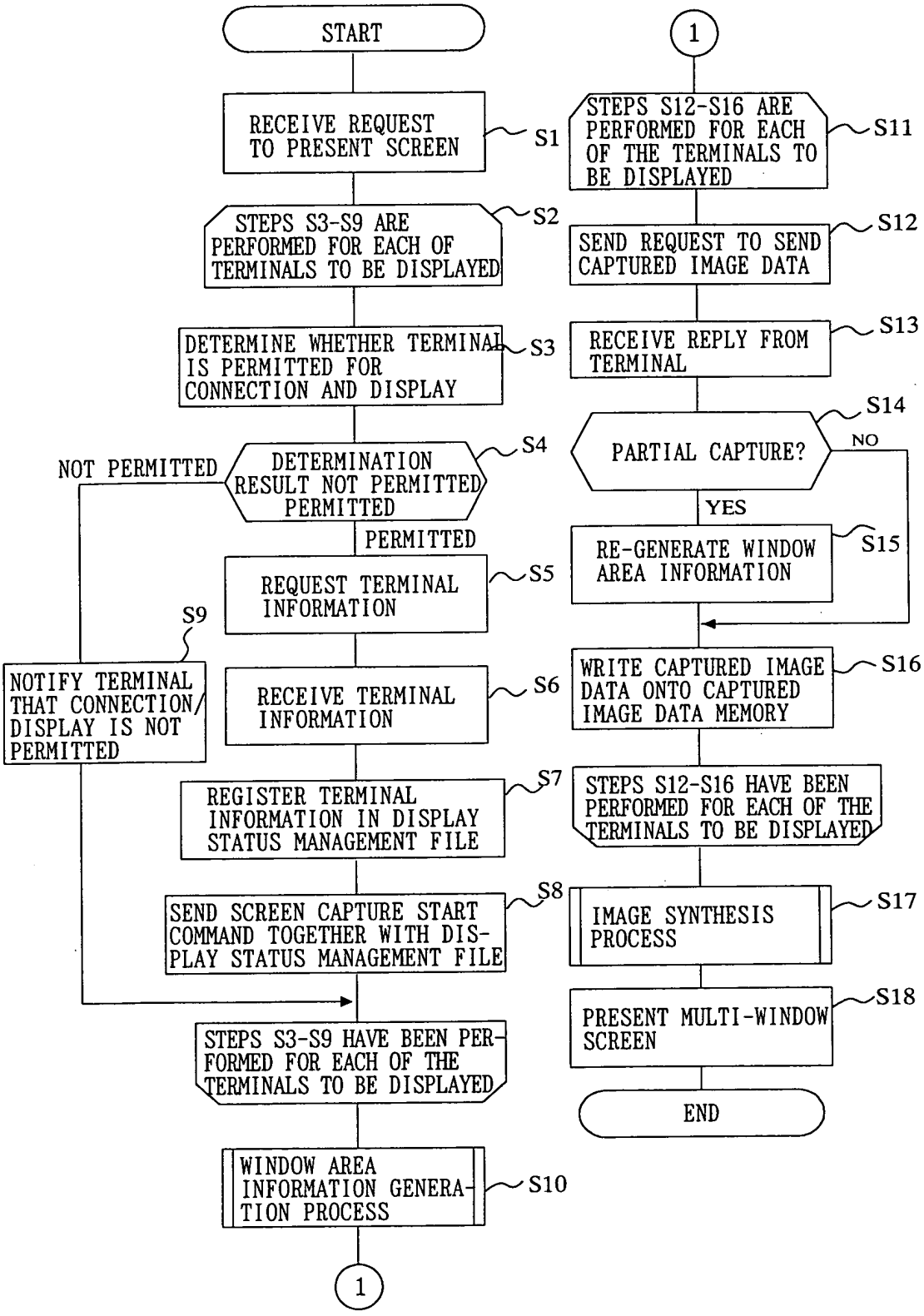
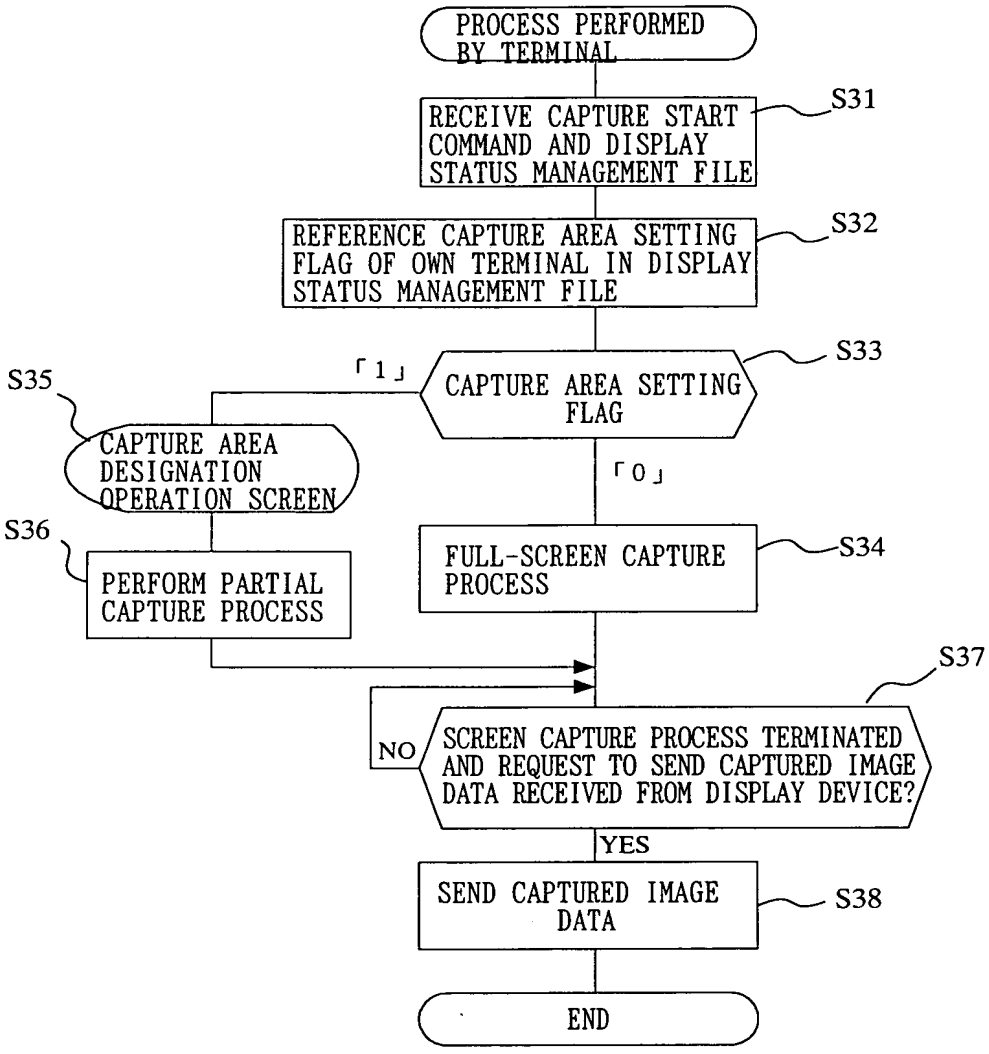

START
RECEIVE REQUEST TO PRESENT SCREEN
S1
STEPS S3-S9 ARE PERFORMED FOR EACH OF TERMINALS TO BE DISPLAYED
S2
DETERMINE WHETHER TERMINAL IS PERMITTED FOR CONNECTION AND DISPLAY
S3
DETERMINATION RESULT NOT PERMITTED PERMITTED
S4
NOT PERMITTED
PERMITTED
REQUEST TERMINAL INFORMATION
S5
RECEIVE TERMINAL INFORMATION
S6
REGISTER TERMINAL INFORMATION IN DISPLAY STATUS MANAGEMENT FILE
S7
SEND SCREEN CAPTURE START COMMAND TOGETHER WITH DISPLAY STATUS MANAGEMENT FILE
S8
S9
NOTIFY TERMINAL THAT CONNECTION/DISPLAY IS NOT PERMITTED
STEPS S3-S9 HAVE BEEN PERFORMED FOR EACH OF THE TERMINALS TO BE DISPLAYED
WINDOW AREA INFORMATION GENERATION PROCESS
S10
1
1
STEPS S12-S16 ARE PERFORMED FOR EACH OF THE TERMINALS TO BE DISPLAYED
S11
SEND REQUEST TO SEND CAPTURED IMAGE DATA
S12
RECEIVE REPLY FROM TERMINAL
S13
PARTIAL CAPTURE?
S14
NO
YES
RE-GENERATE WINDOW AREA INFORMATION
S15
WRITE CAPTURED IMAGE DATA ONTO CAPTURED IMAGE DATA MEMORY
S16
STEPS S12-S16 HAVE BEEN PERFORMED FOR EACH OF THE TERMINALS TO BE DISPLAYED
IMAGE SYNTHESIS PROCESS
S17
PRESENT MULTI-WINDOW SCREEN
S18
END

FIG. 30


PROCESS PERFORMED BY TERMINAL
RECEIVE CAPTURE START COMMAND AND DISPLAY STATUS MANAGEMENT FILE
S31
REFERENCE CAPTURE AREA SETTING FLAG OF OWN TERMINAL IN DISPLAY STATUS MANAGEMENT FILE
S32
CAPTURE AREA SETTING FLAG
S33
「1」
「0」
S35
CAPTURE AREA DESIGNATION OPERATION SCREEN
S36
PERFORM PARTIAL CAPTURE PROCESS
FULL-SCREEN CAPTURE PROCESS
S34
S37
NO
SCREEN CAPTURE PROCESS TERMINATED AND REQUEST TO SEND CAPTURED IMAGE DATA RECEIVED FROM DISPLAY DEVICE?
YES
SEND CAPTURED IMAGE DATA
S38
END